

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants: Necdet Uzun, Mike Takefman
Assignee: Cisco Technology, Inc.
Title: SYSTEMS AND METHODS FOR ALLEVIATING CLIENT
OVER-SUBSCRIPTION IN RING NETWORKS
Application No.: 10/643,490 Filing Date: August 19, 2003
Examiner: Kevin T. Bates Group Art Unit: 2153
Docket No.: CIS0189US Confirmation No. 5439

Austin, Texas
August 4, 2008

Mail Stop: Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF UNDER 37 CFR § 41.37

Dear Sir:

This brief is timely submitted in support of the Notice of Appeal and Pre-Appeal Brief Request for Review regarding the final rejection of claims 1-66. The Appellants note that the Notice of Appeal and Pre-Appeal Brief Request for Review were filed June 4, 2008, having a two-month extendable period for filing an Appeal Brief, with that time period ending on August 4, 2008.

Please charge deposit account No. 502306 for the fee of \$510.00 associated with this appeal brief. Please charge this deposit account for any additional sums which may be required to be paid as part of this appeal.

I. REAL PARTY IN INTEREST

The real party in interest on this appeal is Cisco Technology, Inc.

II. RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences related to this application.

III. STATUS OF CLAIMS

Claims 1-66 are pending in the application.

Claims 1-66 stand rejected.

The Appellants appeal the rejection of claims 1-66.

IV. STATUS OF AMENDMENTS

No amendments were filed subsequent to the final rejection of February 4, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 sets forth a method. As is illustrated, for example, at Figure 2, reference numbers 250 and 290, and described, for example, at p. 13, ll. 11-12, the method includes receiving information indicating a need to change an amount of data being transmitted through a first media access control (MAC) device to a client of the first MAC device.

As is illustrated, for example, at Figure 2, reference numbers 290, 295, and 297, and described, for example, at p. 13, ll. 7-8, and 13, the information is received from the client when the client determines that the client is receiving data at a rate exceeding a set threshold.

As is illustrated, for example, at Figure 2, reference number 300, and described, for example, at p. 13, ll. 28-29, the method includes forming a message including an indication to a second MAC device to change a rate at which the second MAC device transmits data. As is illustrated, for example, at Figure 2, reference numbers 250, 290, and 300, and described, for example, at pp. 13-14, ll. 28-29, forming the message uses the information indicating the need to change the amount of data being transmitted to the client.

As is illustrated, for example, at Figure 2, reference numbers 200, 250, and 300, and described, for example, at p. 13, ll. 17-18, the method includes transmitting the message to the second MAC device over a network.

Independent claim 18 sets forth an apparatus. As is illustrated, for example, at Figure 2, reference number 250, and described, for example, at p. 8, l. 30-p. 9, l. 5, the apparatus includes a first media access control (MAC) device operable to be coupled to a network. As is illustrated, for example, at Figure 2, reference number 260, and described, for example, at p. 9, l. 3, the first MAC device includes control logic. As is illustrated, for example, at Figure 2, reference number 300, and described, for example, at p. 13, ll. 16-18, the control logic is configured to prepare a message for transmission on the network including an indication to change a rate at which another MAC device transmits data.

As is illustrated, for example, at Figure 2, reference number 290, and described, for example, at p. 9, l. 5, the apparatus includes a MAC client coupled to the first MAC device. As is illustrated, for example, at Figure 2, reference number 297, and described, for example, at p. 13, ll. 8-10, the MAC client comprises a buffer for storing data

transmitted to the MAC client. As is illustrated, for example, at Figure 2, reference number 260, and described, for example, at p. 13, ll. 14-16, the MAC client comprises buffer control circuitry configured to provide information about an amount of data stored in the buffer. As described, for example, at p. 13, ll. 16-18, the control logic is responsive to the information about the amount of data stored in the buffer to prepare the message.

Independent claim 35 sets forth an apparatus. As is illustrated, for example, at Figure 2, reference number 250, and described, for example, at p. 8, l. 30-p. 9, l. 5, the apparatus includes a first media access control (MAC) device operable to be coupled to a network. As is illustrated, for example, at Figure 2, reference number 260, and described, for example, at p. 9, l. 3, the first MAC device comprises control logic. As is illustrated, for example, at Figure 2, reference number 300, and described, for example, at p. 13, ll. 16-18, the control logic is configured to prepare a message for transmission on the network including an indication to change a rate at which another MAC device transmits data.

As is illustrated, for example, at Figure 2, reference number 290, and described, for example, at p. 9, l. 5, the apparatus includes a MAC client coupled to the first MAC device. As is illustrated, for example, at Figure 2, reference number 297, and described, for example, at p. 13, ll. 8-10, the MAC client comprises a buffer for storing data transmitted to the MAC client. As is illustrated, for example, at Figure 2, reference number 260, and described, for example, at p. 13, ll. 14-16, the MAC client comprises buffer control circuitry configured to provide information about an amount of data stored in the buffer to the control logic. As is described, for example, at p. 13, ll. 16-18, the

control logic is responsive to the information about the amount of data stored in the buffer in preparation of the message for transmission.

Independent claim 46 sets forth an apparatus. As is illustrated, for example, at Figure 2, reference number 260, and described, for example, at p. 13, ll. 11-18, the apparatus includes a means for receiving information indicating a need to change an amount of data being transmitted through a first media access control (MAC) device to a client of the first MAC device. As is illustrated, for example, at Figure 2, reference numbers 290, 295, and 297, and described, for example, at p. 13, ll. 7-8, and 13, the information is received from the client when the client determines that the client is receiving data at a rate exceeding a set threshold.

As is illustrated, for example, at Figure 2, reference numbers 250, 290, and 300, and described, for example, at p. 13, ll. 16-18 and ll. 28-29, the apparatus includes a means for forming a message including an indication to a second MAC device to change a rate at which the second MAC device transmits data. As is illustrated, for example, at Figure 2, reference numbers 260 and 265, and described, for example, at p. 13, ll. 16-18 and ll. 28-29, the means for forming the message uses the information indicating the need to change the amount of data being transmitted to the client.

As is illustrated, for example, at Figure 2, reference number 200, 250, and 300, and described, for example, at p. 2, ll. 17-18, the apparatus includes a means for transmitting the message to the second MAC device over a network.

Independent claim 54 sets forth a computer readable medium. As is illustrated, for example, at Figure 2, reference numbers 250 and 290, and described, for example, at p.

23, ll. 23-29, the computer readable medium is at least one of an electronic storage medium, a magnetic storage medium, and an optical storage medium, and includes program instructions executable on a processor, wherein the program instructions are operable to implement receiving information indicating a need to change an amount of data being transmitted through a first media access control (MAC) device to a client of the first MAC device, wherein the information is received from the client when the client determines that the client is receiving data at a rate exceeding a set threshold.

As is illustrated, for example, at Figure 2, reference number 250, 290, and 300, and described, for example, at p. 13, ll. 16-18 and ll. 28-29, the instructions are operable to form a message including an indication to a second MAC device to change a rate at which the second MAC device transmits data, wherein said forming the message uses the information indicating the need to change the amount of data being transmitted to the client.

As is illustrated, for example, at Figure 2, reference numbers 200, 250, and 300, and described, for example, at p. 13, ll. 17-18, the instructions are operable to transmit the message to the second MAC device over a network.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Rejection of Claims 1-66 under 35 U.S.C. § 103(a) as purportedly being unpatentable over U.S. Patent Publication No. 2003/0163593 naming Knightly as inventor (Knightly) in view of U.S. Patent No. 7,102,997, issued to Sultan et al. (Sultan).

VII. ARGUMENT

A. Rejection of Claims 1-17 and 46-66 under 35 U.S.C. § 103(a) as purportedly being unpatentable over U.S. Patent Publication No. 2003/0163593 naming Knightly as inventor (Knightly) in view of U.S. Patent No. 7,102,997, issued to Sultan et al. (Sultan) is unfounded and should be overturned.

Claims 1-17 and 46-66 stand rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over U.S. Patent Publication No. 2003/0163593 naming Knightly as inventor (Knightly) in view of U.S. Patent No. 7,102,997 issued to Sultan *et al.* (Sultan). See Final Office Action dated January 4, 2008, p. 2 (FOA). Appellants have traversed each of these rejections and Appellants now respectfully submit that each rejection is in error and should be overturned.

Independent claims 1, 46, and 54 contain limitations of substantially the following form:

receiving information indicating a need to change an amount of data being transmitted through a first media access control (MAC) device to a client of the first MAC device, wherein
the information is received from the client when the client determines that the client is receiving data at a rate exceeding a set threshold;
forming a message including an indication to a second MAC device to change a rate at which the second MAC device transmits data, wherein
said forming the message uses the information indicating the need to change the amount of data being transmitted to the client; and
transmitting the message to the second MAC device over a network.

See, e.g., claim 1. Appellants submit that neither Knightly nor Sultan, alone or in combination, disclose all the limitations of independent claims 1, 46, and 54.

The FOA admits that Knightly fails to disclose the following limitations recited by independent claims 1, 46, and 54: “the information is received when the client

determines that the client is receiving data at a rate exceeding a set threshold.” FOA, p. 3.

The FOA cites the following passages of Sultan as purportedly supplying this missing disclosure:

FIG. 3 shows a “leaky bucket” mechanism used at each node 12 for monitoring and controlling the use of an outgoing ring segment 14 by users of a given CUG 18. (Sultan 4:38-40)

When the threshold 22 is exceeded, the RPR node 12 sends a “throttle” message to a selected CUG member indicating that the CUG member should reduce its rate of transmission into the network 10, as described above with reference to FIG. 2. (Sultan 5:1-5.)

Appellants respectfully submit that nothing in the cited portions (or elsewhere) of Sultan teaches or suggests that a client determines that the client is receiving information at a rate exceeding a set threshold, and that the client provides information so indicating, as claimed. Instead, the cited passages relate to monitoring an amount of traffic transmitted by users of a closed user group (CUG), which are clients of a resilient packet ring (RPR) node. *See* Sultan 2:62-64.

The cited passages of Sultan disclose “a ‘leaky bucket’ mechanism used at each node 12 for monitoring and controlling the use of an outgoing ring segment....” Sultan 4:38-40. Sultan’s leaky bucket mechanism (shown in Sultan, FIG. 3) includes packet buffers for purportedly storing outgoing packets, or packets transmitted from the clients of a closed user group (CUG) to the network. *See, e.g.*, Sultan 4:42-47. Packets are purportedly put into the bucket when members of a CUG (which may be scattered among various nodes of the ring) attempt to transmit packets onto a particular outgoing link. *Id.* Packets are purportedly removed from the bucket and transmitted onto the link according to a predetermined rate according to the specified aggregate transmission rate for the

CUG. Sultan 4:54-55. The bucket (buffers) “fills” when more packets are put into the bucket than are removed. *See* Sultan 4:54-60.

When the node (equated by the FOA with the claimed MAC device (*see, e.g.,* FOA, pp. 2-3)) maintaining the bucket determines that the bucket has filled, the node sends one of the CUG members a throttle message indicating that the member should decrease the rate at which the member transmits packets into the network. Sultan 5:1-5. As summarized by the Advisory Action mailed May 2, 2008 (AA) “nodes can monitor their receiving rates...then sending [sic] throttle messages to clients.” AA, p. 2. (emphasis added). But a node’s receiving rate (effectively a CUG’s transmission rate) is not comparable to a client determining that the client’s receiving rate exceeds a threshold.

As stated above, the users of the CUG are described by Sultan as clients. *See* Sultan 2:62-64. The data received by the nodes, as described in the cited sections of Sultan, is data the clients transmit. *See* Sultan 4:21-25. Thus, Sultan discloses a node determining that the rate at which a group of clients transmits data exceeds a threshold. Sultan does not teach a client determining that the client is receiving data at a rate that exceeds a threshold. In fact, Sultan expresses the desirability of avoiding determining the rate at which a single client transmits data, to say nothing of determining the rate at which a client receives data. *See* Sultan 2:18-20 (“This has the effect of limiting the CUG to its specified rate without requiring any specification or monitoring of individual data rates among users of the CUG.”)

Further, the FOA states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Sultan and Knightly to “ensure

certain service level agreements and best effort rates.” FOA, p. 3. However, as noted in Appellants’ Specification, such agreements “assume that a client associated with a particular station...can accept data at ring rate.” Application, p. 4, ¶ 11, ll. 8-10. Thus, the motivation to combine proposed by the FOA is completely oblivious to one of the problems addressed by the instant Application, namely the need to “have mechanisms by which data flow to ring station MAC clients can be controlled.” Application, p. 4, ¶ 12, ll. 16-17. Even if one were motivated to combine Knightly and Sultan as proposed by the FOA, and could such a combination be made (a point Appellants do not concede), the combination, in failing to disclose each element of the claims, would fail to solve the problems addressed by the instant Application.

In light of the above discussion, Appellants submit that neither Knightly nor Sultan, alone or in combination, teaches all the limitations of independent claims 1, 46, and 54, and all claims depending therefrom (claims 2-17, 17-53, and 55-66) and that the rejections of those claims are in clear error. Appellants therefore request the Board overturn the rejections to these claims and provide an indication of allowability of the same.

B. Rejection of Claims 18-45 under 35 U.S.C. § 103(a) as purportedly being unpatentable over U.S. Patent Publication No. 2003/0163593 naming Knightly as inventor (Knightly) in view of U.S. Patent No. 7,102,997, issued to Sultan et al. (Sultan) is unfounded and should be overturned.

Claims 18-45 stand rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over U.S. Patent Publication No. 2003/0163593 naming Knightly as inventor (Knightly) in view of U.S. Patent No. 7,102,997, issued to Sultan et al. (Sultan).

See FOA, p. 2. Appellants have traversed each of these rejections and Appellants now respectfully submit that each rejection is in error and should be overturned.

Independent claims 18 and 35 contain limitations of substantially the following form:

a first media access control (MAC) device operable to be coupled to a network,
the first MAC device including control logic configured to prepare a
message for transmission on the network including an indication to change
a rate at which another MAC device transmits data; and
a MAC client coupled to the first MAC device, wherein the MAC client
comprises
a buffer for storing data transmitted to the MAC client and
buffer control circuitry configured to provide information about an amount
of data stored in the buffer, wherein
the control logic is responsive to the information about the amount
of data stored in the buffer to prepare the message.

See, e.g., claim 18. Appellants submit that neither Knightly nor Sultan, alone or in combination, disclose all the limitations of independent claims 18 and 35.

The FOA admits that Knightly fails to disclose the following limitation recited by independent claims 18 and 35: “a buffer for storing data transmitted to the MAC client.” FOA, p. 4. The FOA cites the following passages of Sultan as purportedly supplying this missing disclosure:

In addition to providing for logical separation of the traffic from different CUGs 18, the RPR nodes 12 provide other services on a per-CUG basis. In particular, the RPR nodes 12 perform functions pertaining to CUG-specific service level agreements (SLAs) that specify the nature of CUG traffic and the type of service to be provided by the network 10.

Sultan 3:19-24. Appellants respectfully submit that the cited passage of Sultan fails to disclose “a buffer for storing data transmitted to the MAC client.” The FOA states that

the cited passage “teaches a system where there is included buffers on a per client basis that are monitored and used for sending throttle messages.” FOA, p. 4. However, Appellants respectfully submit that any “buffers” that may be hinted at by the cited passage would not be buffers for storing data transmitted to the MAC client, as recited by Appellants’ claims. Instead the buffers would store data transmitted by a CUG (or a group of clients).

As previously discussed, Sultan discloses, at best, outgoing data buffers on a per CUG basis, and not buffers for incoming data destined for a client on a per client basis as claimed. *See, e.g.*, Sultan 4:38-42 (“FIG. 3 shows a “leaky bucket” mechanism used at each node 12 for monitoring and controlling the use of an outgoing ring segment 14 by users of a given CUG 18 . The leaky bucket mechanism is replicated for each CUG 18 for which a given node 12 carries traffic.”) (emphasis added).

The FOA presents identical rationale for combining Sultan and Knightly with reference to independent claims 18 and 35 as was provided for independent claims 1, 46, and 54. *See* FOA, p. 4. Appellants respectfully submit that the arguments presented above with reference to independent claims 1, 46, and 54 regarding combining Sultan with Knightly are equally applicable with reference to independent claims 18 and 35.

In light of the above discussion, Appellants submit that neither Knightly nor Sultan, alone or in combination, teaches all the limitations of independent claims 18 and 35, and all claims depending therefrom (claims 19-34 and 36-45) and that the rejections of those claims are in clear error. For at least these reasons, Appellants respectfully submit that the rejections of pending Claims 1-66 are unfounded. Accordingly,

Appellants respectfully request that the Board reverse the rejections of these claims and that a notice of allowance issue for each of Claims 1-66.

CONCLUSION

The Appellants respectfully submit that claims 1-66 are allowable over the cited references for at least the above-stated reasons. The Appellants respectfully request that the Board reverse the rejections of these claims.

Respectfully submitted,



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VIII. CLAIMS APPENDIX

1. (Previously Presented) A method comprising:
receiving information indicating a need to change an amount of data being
transmitted through a first media access control (MAC) device to a client
of the first MAC device, wherein
the information is received from the client when the client determines that
the client is receiving data at a rate exceeding a set threshold;
forming a message including an indication to a second MAC device to change a
rate at which the second MAC device transmits data, wherein
said forming the message uses the information indicating the need to
change the amount of data being transmitted to the client; and
transmitting the message to the second MAC device over a network.
2. (Original) The method of claim 1 wherein the network is a metropolitan area
network (MAN).
3. (Original) The method of claim 1 wherein the network is a resilient packet
ring (RPR) network.
4. (Original) The method of claim 1 wherein the network includes a first
datapath for transmitting data from the first MAC device to the second MAC device, and
wherein the network includes a second datapath for transmitting data from the second
MAC device to the first MAC device.
5. (Original) The method of claim 1 wherein the message is a resilient packet
ring (RPR) fairness message.
6. (Original) The method of claim 1 further comprising:
determining an extent to which a data buffer associated with the client of the first
MAC device contains data; and

preparing the information indicating the need to change the amount of data being transmitted through the first MAC device to the client of the first MAC device based on the extent to which the data buffer associated with the client of the first MAC device contains data.

7. (Original) The method of claim 6 further comprising:
transmitting, to the first MAC device, the information indicating the need to change the amount of data being transmitted through the first MAC device to the client of the first MAC device.

8. (Original) The method of claim 1 wherein the message further includes a MAC device address.

9. (Original) The method of claim 8 wherein the MAC device address corresponds to one of the first MAC device, the second MAC device, and another MAC device.

10. (Original) The method of claim 1 wherein the indication to the second MAC device to change the rate at which the second MAC device transmits data includes at least one of: a MAC device address, a data transmission rate, a ramp factor, and a flag.

11. (Original) The method of claim 1 wherein the indication to the second MAC device to change the rate at which the second MAC device transmits data includes a data transmission rate, the method further comprising:
determining the data transmission rate.

12. (Original) The method of claim 11 wherein the determining the data transmission rate further comprises at least one of:
calculating the data transmission rate;
selecting a value for the data transmission rate; and
determining a ramp factor.

13. (Original) The method of claim 1 further comprising:
transmitting the message from the second MAC device to a third MAC device.

14. (Original) The method of claim 1 wherein the first MAC device is part of a first resilient packet ring (RPR) station and wherein the second MAC device is part of a second RPR station.

15. (Original) The method of claim 1 wherein the information indicating the need to change the amount of data being transmitted through the first MAC device to the client of the first MAC device includes at least one of: a data transmission rate, a counter value, a message indicating that a buffer threshold has been exceeded, and a signal from the client of the first MAC.

16. (Original) The method of claim 1 wherein:
the information indicating the need to change the amount of data being
transmitted through the first MAC device to the client of the first MAC
device further comprises at least one of: information indicating the need to
reduce the amount of data being transmitted, and information indicating
the need to increase the amount of data being transmitted; and
the indication to the second MAC device to change the rate at which the second
MAC device transmits data further comprises at least one of: an indication
to the second MAC device to reduce the rate at which the second MAC
device transmits data, and an indication to the second MAC device to
increase the rate at which the second MAC device transmits data.

17. (Previously Presented) The method of claim 1 encoded in a computer
readable medium as instructions executable on a processor, the computer readable
medium being one of an electronic storage medium, a magnetic storage medium, and an
optical storage medium.

18. (Previously Presented) An apparatus comprising:
a first media access control (MAC) device operable to be coupled to a network,
the first MAC device including control logic configured to prepare a message for transmission on the network including an indication to change a rate at which another MAC device transmits data; and
a MAC client coupled to the first MAC device, wherein the MAC client comprises
a buffer for storing data transmitted to the MAC client and
buffer control circuitry configured to provide information about an amount of data stored in the buffer, wherein
the control logic is responsive to the information about the amount of data stored in the buffer to prepare the message.
19. (Original) The apparatus of claim 18 wherein the network is a metropolitan area network (MAN).
20. (Original) The apparatus of claim 18 wherein the network is a resilient packet ring (RPR) network.
21. (Original) The apparatus of claim 18 further comprising:
a second MAC device, wherein the second MAC device is the another MAC device;
a first datapath coupled between the first MAC device and the second MAC device, the first datapath for transmitting data from the first MAC device to the second MAC device; and
a second datapath coupled between the first MAC device and the second MAC device, the second datapath for transmitting data from the second MAC device to the first MAC device.
22. (Original) The apparatus of claim 21 wherein the first MAC device is further operable to transmit the message to the second MAC device.

23. (Original) The apparatus of claim 21 wherein the second MAC device is configured to transmit the message to a third MAC device.

24. (Original) The apparatus of claim 21 wherein the first MAC device is part of a first resilient packet ring (RPR) station and wherein the second MAC device is part of a second RPR station.

25. (Original) The apparatus of claim 18 wherein the message is a resilient packet ring (RPR) fairness message.

26. (Original) The apparatus of claim 18 wherein the buffer control circuitry is coupled to the control logic, and wherein the control logic is further configured to use the information about the amount of data stored in the buffer to determine the indication to change the rate at which another MAC device transmits data.

27. (Original) The apparatus of claim 18 wherein the message further includes a MAC device address.

28. (Original) The apparatus of claim 27 wherein the MAC device address corresponds to one of the first MAC device and the another MAC device.

29. (Original) The apparatus of claim 18 wherein the indication to change the rate at which another MAC device transmits data includes at least one of: a MAC device address, a data transmission rate, a ramp factor, and a flag.

30. (Original) The apparatus of claim 18 wherein the control circuitry is further configured to determine at least one of a data transmission rate and a data transmission rate ramp.

31. (Original) The apparatus of claim 18 wherein the information about an amount of data stored in the buffer includes at least one of: a data transmission rate, a counter value, a message indicating that a buffer threshold has been exceeded, and a signal from the client of the first MAC.

32. (Original) The apparatus of claim 18 wherein MAC client further comprises packet processing circuitry coupled to the buffer.

33. (Original) The apparatus of claim 32 wherein the packet processing circuitry includes the buffer control circuitry.

34. (Original) The apparatus of claim 18 wherein the indication to change the rate at which another MAC device transmits data further comprises at least one of an indication to reduce the rate at which another MAC device transmits data, and an indication to increase the rate at which another MAC device transmits data.

35. (Previously Presented) An apparatus comprising:
a first media access control (MAC) device operable to be coupled to a network,
the first MAC device comprises
control logic configured to prepare a message for transmission on the
network including an indication to change a rate at which another
MAC device transmits data;
a MAC client coupled to the first MAC device, the MAC client comprises
a buffer for storing data transmitted to the MAC client, and
buffer control circuitry configured to provide information about an amount
of data stored in the buffer to the control logic, wherein
the control logic is responsive to the information about the amount
of data stored in the buffer in preparation of the message
for transmission.

36. (Original) The apparatus of claim 35 wherein the network is at least one of a metropolitan area network (MAN) and a resilient packet ring (RPR) network.

37. (Original) The apparatus of claim 35 further comprising:

a second MAC device, wherein the second MAC device is the another MAC device;

a first datapath coupled between the first MAC device and the second MAC device, the first datapath for transmitting data from the first MAC device to the second MAC device; and

a second datapath coupled between the first MAC device and the second MAC device, the second datapath for transmitting data from the second MAC device to the first MAC device.

38. (Original) The apparatus of claim 35 wherein the message is a resilient packet ring (RPR) fairness message.

39. (Original) The apparatus of claim 35 wherein the buffer control circuitry is coupled to the control logic, and wherein the control logic is further configured to use the information about the amount of data stored in the buffer to determine the indication to change the rate at which another MAC device transmits data.

40. (Original) The apparatus of claim 35 wherein the message further includes a MAC device address.

41. (Original) The apparatus of claim 35 wherein the indication to change the rate at which another MAC device transmits data includes at least one of: a MAC device address, a data transmission rate, a ramp factor, and a flag.

42. (Original) The apparatus of claim 35 wherein the control circuitry is further configured to determine at least one of a data transmission rate and a data transmission rate ramp.

43. (Original) The apparatus of claim 35 wherein the information about an amount of data stored in the buffer includes at least one of: a counter value and a signal indicating that a buffer threshold has been exceeded.

44. (Original) The apparatus of claim 35 further comprising:
a MAC client coupled to the first MAC device, the MAC client including packet processing circuitry operable to receive data from the buffer.

45. (Original) The apparatus of claim 35 wherein the indication to change the rate at which another MAC device transmits data further comprises at least one of an indication to reduce the rate at which another MAC device transmits data, and an indication to increase the rate at which another MAC device transmits data.

46. (Previously Presented) An apparatus comprising:
a means for receiving information indicating a need to change an amount of data being transmitted through a first media access control (MAC) device to a client of the first MAC device, wherein
the information is received from the client when the client determines that
the client is receiving data at a rate exceeding a set threshold;
a means for forming a message including an indication to a second MAC device to change a rate at which the second MAC device transmits data, wherein
said means for forming the message uses the information indicating the
need to change the amount of data being transmitted to the client;
and
a means for transmitting the message to the second MAC device over a network.

47. (Original) The apparatus of claim 46 wherein the network is at least one of a metropolitan area network (MAN) and a resilient packet ring (RPR) network.

48. (Original) The apparatus of claim 46 wherein the message is a resilient packet ring (RPR) fairness message.

49. (Original) The apparatus of claim 46 further comprising:
a means for determining an extent to which a data buffer associated with the client of the first MAC device contains data; and
a means for preparing the information indicating the need to change the amount of data being transmitted through the first MAC device to the client of the first MAC device based on the extent to which the data buffer associated with the client of the first MAC device contains data.

50. (Original) The apparatus of claim 46 wherein the message further includes a MAC device address.

51. (Original) The apparatus of claim 46 wherein the indication to the second MAC device to change the rate at which the second MAC device transmits data includes at least one of: a MAC device address, a data transmission rate, a ramp factor, and a flag.

52. (Original) The apparatus of claim 46 wherein the information indicating the need to change the amount of data being transmitted through the first MAC device to the client of the first MAC device includes at least one of: a data transmission rate, a counter value, a message indicating that a buffer threshold has been exceeded, and a signal from the client of the first MAC.

53. (Original) The apparatus of claim 46 wherein:
the information indicating the need to change the amount of data being transmitted through the first MAC device to the client of the first MAC device further comprises at least one of: information indicating the need to reduce the amount of data being transmitted, and information indicating the need to increase the amount of data being transmitted; and
the indication to the second MAC device to change the rate at which the second MAC device transmits data further comprises at least one of: an indication to the second MAC device to reduce the rate at which the second MAC device transmits data, and an indication to the second MAC device to increase the rate at which the second MAC device transmits data.

54. (Previously Presented) A computer readable medium comprising program instructions executable on a processor, the computer readable medium being at least one of an electronic storage medium, a magnetic storage medium, and an optical storage medium, wherein the program instructions are operable to implement each of:

receiving information indicating a need to change an amount of data being transmitted through a first media access control (MAC) device to a client of the first MAC device, wherein the information is received from the client when the client determines that the client is receiving data at a rate exceeding a set threshold; forming a message including an indication to a second MAC device to change a rate at which the second MAC device transmits data, wherein said forming the message uses the information indicating the need to change the amount of data being transmitted to the client; and transmitting the message to the second MAC device over a network.

55. (Original) The computer readable medium of claim 54 wherein the network is at least one of a metropolitan area network (MAN) and a resilient packet ring (RPR) network.

56. (Original) The computer readable medium of claim 54 wherein the message is a resilient packet ring (RPR) fairness message.

57. (Original) The computer readable medium of claim 54 further comprising program instructions operable to implement:
determining an extent to which a data buffer associated with the client of the first MAC device contains data; and
preparing the information indicating the need to change the amount of data being transmitted through the first MAC device to the client of the first MAC device based on the extent to which the data buffer associated with the client of the first MAC device contains data.

58. (Original) The computer readable medium of claim 57 further comprising program instructions operable to implement:
transmitting, to the first MAC device, the information indicating the need to
change the amount of data being transmitted through the first MAC device
to the client of the first MAC device.

59. (Original) The computer readable medium of claim 54 wherein the message further includes a MAC device address.

60. (Original) The computer readable medium of claim 59 wherein the MAC device address corresponds to one of the first MAC device, the second MAC device, and another MAC device.

61. (Original) The computer readable medium of claim 54 wherein the indication to the second MAC device to change the rate at which the second MAC device transmits data includes at least one of: a MAC device address, a data transmission rate, a ramp factor, and a flag.

62. (Original) The computer readable medium of claim 54 wherein the indication to the second MAC device to change the rate at which the second MAC device transmits data includes a data transmission rate, the method further comprising:
determining the data transmission rate.

63. (Original) The computer readable medium of claim 54 further comprising program instructions operable to implement at least one of:
calculating the data transmission rate;
selecting a value for the data transmission rate; and
determining a ramp factor.

64. (Original) The computer readable medium of claim 54 further comprising program instructions operable to implement:
transmitting the message from the second MAC device to a third MAC device.

65. (Original) The computer readable medium of claim 54 wherein the information indicating the need to change the amount of data being transmitted through the first MAC device to the client of the first MAC device includes at least one of: a data transmission rate, a counter value, a message indicating that a buffer threshold has been exceeded, and a signal from the client of the first MAC.

66. (Original) The computer readable medium of claim 54 wherein:
the information indicating the need to change the amount of data being transmitted through the first MAC device to the client of the first MAC device further comprises at least one of: information indicating the need to reduce the amount of data being transmitted, and information indicating the need to increase the amount of data being transmitted; and
the indication to the second MAC device to change the rate at which the second MAC device transmits data further comprises at least one of: an indication to the second MAC device to reduce the rate at which the second MAC device transmits data, and an indication to the second MAC device to increase the rate at which the second MAC device transmits data.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None